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Abstract

DEVELOPMENTS OF COMMISSIONING PROCEDURES FOR GAS COOLED REACTORS

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The planned and actual commissioning programmes for Bradwell and Latina are compared and it is shown that the experience with the earlier stations enabled substantial reductions to be made in the time taken to commission Latina. In the mechanical proving tests, the major savings were in leak testing and rectification, in the testing of the fuel handling equipment, in the removal of protective coatings and in the final proving runs.

A considerable part of the commissioning phase is occupied in loading fuel and in setting the gags controlling the flow of coolant gas in each fuel channel or in measuring this flow.

Improved methods and organisation enabled the times for these operations to be substantially reduced and an outline of these methods is included in the paper.

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The scope of the physics commissioning programme, prior to power operation, is discussed in relation to the three main objectives (a) setting up the reactor for optimum operation (b) assessment of reactor safety and (c) obtaining information for operational purposes. The complementary roles of experiment and design calculations in achieving these objectives are described and it is shown that confidence in the accuracy of the latter methods is of primary importance.

In order to demonstrate the degree of confidence achieved, the experimental results of the Latina programme are compared with predictions made available before the experiments commenced and it is shown that in general good agreement was obtained. The reduced experimental programme at Latina is explained by comparison with the corresponding Bradwell programme and it is shown by reference to the proposed Dungeness programme that still further reductions can be anticipated in most phases of the commissioning period. In particular, the time now allocated to physics measurements is no more than two weeks.